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Dietary observation of the brown-eared woolly opossum *Caluromys lanatus* (Olfers, 1818) feeding on *Cecropia peltata* infructescence in a tropical dry forest of Honda, Magdalena, Colombia

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ABSTRACT

The brown-eared woolly opossum (*Caluromys lanatus*) is a South American marsupial distributed in many countries, including Colombia. It inhabits several ecosystems and consumes mainly fruits as part of its omnivorous and opportunistic diet. This study reports a new feeding record for *C. lanatus* on *Cecropia peltata* in the department of Tolima, Colombia. Given the wide distribution of this plant in the national territory, it may be a stable food source for *C. lanatus*. More studies are needed to know the species' diet and understand its ecological interactions, essential to manage strategies for its conservation and protection.

Keywords: *Caluromys*, Colombia, food habits, marsupial, seed dispersal

RESUMEN - Observación dietaria de la zarigüeya lanuda orejicastaña *Caluromys lanatus* (Olfers, 1818) alimentándose de frutos de *Cecropia peltata* en un bosque seco tropical de Honda, Colombia.

La zarigüeya lanuda occidental (*Caluromys lanatus*) es un marsupial sudamericano distribuido en múltiples países, entre ellos Colombia. Habita varios ecosistemas y consume principalmente frutas dentro de su dieta omnívora y oportunista. Aquí reportamos un nuevo registro alimenticio para *C. lanatus* en el departamento de Tolima, Colombia. Un individuo adulto fue observado alimentándose de frutos de *Cecropia peltata*. Dada la amplia distribución de esta planta en Colombia, consideramos que esta puede ser una fuente de alimento estable. Se necesitan más estudios para conocer y comprender sus interacciones ecológicas, esenciales para gestionar estrategias para su conservación y protección.

Palabras clave: *Caluromys*, Colombia, dispersión de semillas, hábitos alimentarios, marsupial

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The brown-eared woolly opossum, *Caluromys lanatus* (Olfers, 1818), is a South American marsupial species distributed across northeastern Argentina, Bolivia, Brazil, Colombia, Paraguay, Peru, and Venezuela (Gardner 2008). Its distribution spans a wide elevation range from 0 to 2000 meters above sea level, and includes various habitats such as primary and secondary humid forests, rainforests, gallery forests, plantations, transitional forests, dense savannas, swamps, and dry and xerophytic forests (Bangs 1898; Johnson et al. 1999; Cáceres & Carmignotto 2006; Fonseca & Astúa 2015; Flórez-Oliveros & Vivas-Serna 2020; Bastidas et al. 2021). Current reports suggest that the population of the brown-eared woolly opossum is likely decreasing due to habitat loss, although its conservation status is currently listed as Least Concern (Costa et al. 2021).

In Colombia, the brown-eared woolly opossum is widely distributed in lowland humid forests, plantations, riverine forests, as well as in dry xerophytic forest, and savannas (Webb & Blincow 2024). It has been recorded in the departments of Atlántico, Antioquia, Bolívar, Boyacá, Caldas, Cauca, Cesar, Córdoba, Cundinamarca, La Guajira, Huila, Magdalena, Norte de Santander, Santander, Tolima, and Valle del Cauca (Chacón-Pacheco et al. 2023). This medium-sized marsupial has long, dense, woolly fur with a reddish-brown coloration that may vary toward yellow-orange and grey (Webb & Blincow 2024). While there are reports of opportunistic feeding on mammals, birds, and arthropods, the brown-eared woolly opossum has a predominantly frugivorous diet (Cáceres 2005; Casella & Cáceres 2006; De Camargo et al. 2017; Balbuena et al. 2023). The species has also been proposed as both a seed disperser and a pollinator, but detailed studies on its diet remain scarce. Understanding its feeding behavior is therefore essential for clarifying its ecological role (Janson et al. 1981; Gribel 1988; Cáceres 2005).

Cecropia peltata (Linnaeus, 1759) is a plant species belonging to the Urticaceae family, with a wide distribution that includes the Caribbean Antilles and Mexico, extending into Colombia, Venezuela, Brazil, and Guyana (Botanic Gardens Conservation International [BGCI] & IUCN SSC Global Tree Specialist Group 2019). It is characterized as a pioneer species in subtropical, humid, and rainforest ecosystems, though it is uncommon in tropical dry forests (Silander & Lugo 1990). Like most *Cecropia* species, *C. peltata* produces fruit throughout much of the year, forming infructescences that contain multiple seeds (Burns & Honkala 1990). These fruits are an important food source for various mammal species, such as monkeys and bats, as well as for numerous bird species (Fleming & Williams 1990).

We recorded an incidental observation of a feeding event by a brown-eared woolly opossum on *C. peltata* in a riverine tropical dry forest fragment in Honda, Tolima. Tropical dry forests are considered as highly threatened in Colombia, with over 90% of their original cover transformed due to urban expansion, cattle ranching, and forest fires (Pizano & García 2014; González-M et al. 2018). The study area includes forest relicts in various successional stages, interspersed with cattle ranching landscapes, and pasturelands (Pizano & García 2014). The dominant botanical families include Euphorbiaceae and Lecythidaceae. The riverine tropical dry forest is located at latitude 5.15000; longitude -74.78333 (Fig. 1). The area is characterized by having



a marked seasonality, with two dry seasons between December and February, and again from July to September (González-M et al. 2018). The mean annual temperature is 26.5 ± 1 °C, with temperatures exceeding 30 °C during July, August, and September, and annual average precipitation is 2991.23mm (González-M et al. 2018).

Although information on the diet of the brown-eared woolly opossum is scarce, some studies have reported the consumption of plant species belonging to the families Malvaceae, Moraceae, Piperaceae, Rosaceae, and Urticaceae (Janson et al. 1981; Gribel 1988; Casella & Cáceres 2006). Among this last group, the consumption of *Cecropia pachystachya* has been reported, a species whose distribution is limited to Argentina, Brazil, and Paraguay (Casella & Cáceres, 2006). Thus, this represents the first documented observation of the brown-eared woolly opossum feeding on *C. peltata*, and more broadly, the first direct evidence of this interaction in a Colombian tropical dry forest.

The identification of the brown-eared woolly opossum was conducted using the field guides by Emmons & Feer (1997), and the identification of *C. peltata* was based on field observations, and the analysis of botanical samples such as fruits, and seeds at the study site. According to Cirignoli et al. (2019), the brown-eared woolly opossum may play a role in the dispersal of various tree species. We propose that this marsupial could act as a potential seed disperser for *C. peltata*; however, further research is needed to assess seed viability after ingestion. This observation adds valuable information on our scarce knowledge of the diet of the brown-eared woolly opossum, and highlights its potential ecological role in disturbed tropical dry forests. The species' diet may be more diverse than previously assumed, and understanding such interactions is essential for designing effective conservation strategies that promote animal and plant diversity.

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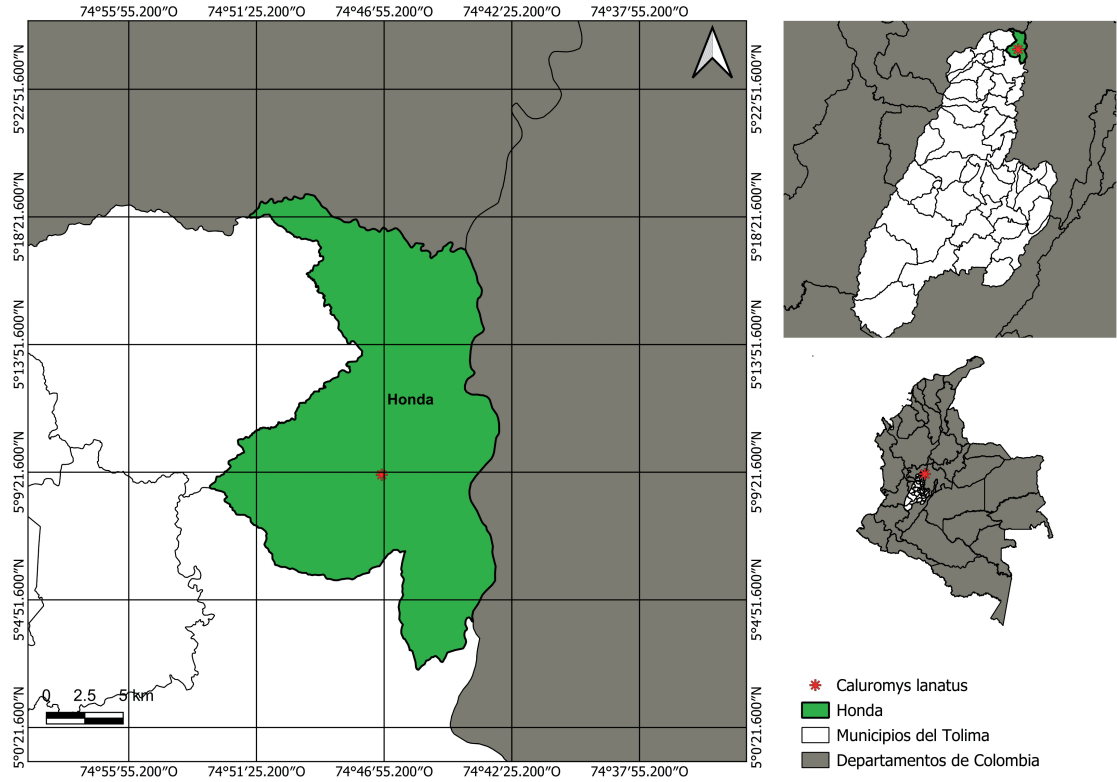


Figure 1. Study site in Honda, Tolima, Colombia. The red dot indicates the location where the described observations took place. On the night of July the 9th, 2023, at 3:25, we observed a brown-eared woolly opossum individual feeding arboreally on the fruits of *C. peltata*. Over a period of 3 minutes and 30 seconds, we documented the feeding behavior on three different *C. peltata* individuals. During these events, the marsupial was observed foraging, selecting, and feeding on fruits of *C. peltata* while resting on top of a branch (Fig. 2). The fruit selection process was carried out bimanually while the individual was positioned on a main branch. However, when fruits were located beyond his reach, the individual extended its snout and used one hand to obtain the fruit, while maintaining stability by grasping a nearby branch with the other hand. We observed that some of the fruits were tasted and then dropped, because they were unripe. The foraging behavior included smelling fruits, and moving forward to surrounding branches looking for other fruits to consume. Finally, the individual would hold the fruit, feed on it, and then drop it. Other foraging events were documented, but the feeding process stopped and the brown-eared woolly opossum individual fled. These events were recorded on video. (Supplementary online material 1).



Figure 2. Brown-eared woolly opossum (*Caluromys lanatus*) feeding on *Cecropia peltata* fruits, at Honda, Tolima, Colombia. The lighting in the photo was AI-edited.

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